

### **REMARKS**

Applicants appreciate the thorough examination of the application that is reflected in the Office Action dated August 11, 2006. Applicants also appreciate the Examiner's indication that claims 10-20, 26-29, 33 and 35 are allowed, and that claim 4 is objected to but allowable if rewritten in independent form.

Claims 1, 3-20, 26-30, 32, 33, and 35 (27 total claims; 6 independent claims) remain pending in the application. Reconsideration of the application is respectfully requested in view of the above amendments and the following remarks.

#### **Art-Based Rejections**

Claims 1, 3, 5-9, 30 and 32 were rejected under 35 U.S.C. 103(a) as being unpatentable over McCarville et al. in view of Palmer.

Claim 1 relates to method of sealing a vacuum membrane to a surface. This method includes the steps of:

- defining a vacuum zone on the surface including placing a double-stick tape on the surface at a boundary of said vacuum zone;
- placing a breather over the surface within said vacuum zone;
- placing a membrane over said breather, said membrane covering said vacuum zone;
- forming a vacuum seal between said membrane and the surface; and
- covering said vacuum seal with a laminate release surface. (Emphasis added.)

As discussed in the Abstract of Palmer, Palmer relates to a process for producing a resin-fiber composite which comprises applying a "B" stage resin film to a mold surface, placing a fiber reinforcement layer over the "B" stage film, applying a porous parting film over the fiber reinforcement layer, applying a bleeder layer over the fiber reinforcement layer and placing a non-porous material over the bleeder layer. A bag is placed over the materials and sealed to or around the mold. A vacuum is applied to the mold and then the assembly is heated to a temperature sufficient to cause the "B" stage resin to flow and to impregnate the reinforcement layer, and pass up through the porous parting film and to impregnate the bleeder layer. The volume of resin provided by the "B" stage resin film is calculated so that saturation of both the fiber reinforcement layer and the bleeder layer occur, assuring uniform

impregnation of the fiber reinforcement layer. The mold pressure is then increased and the temperature is raised to produce final curing of the resin impregnated fiber reinforcement layer, and the resulting resin impregnated fiber reinforcement layer is removed from the mold. A curable resin liquid can be employed in place of the "B" stage resin film.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify a reference or to combine the teachings of multiple references. Second, there must be a reasonable expectation of success. Third, the prior art must teach or suggest all of the recited claim limitations. Of course, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure.

Applicants respectfully submits that the Examiner has not met all of the above criteria, and respectfully traverses these rejections for at least the following reasons.

#### **Claims 1-6**

In rejecting claim 1, the Examiner concedes that "McCarville et al. does not disclose the sealant tape being a double-stick tape." However, the Examiner alleges that "it is know to use a double-stick sealant at the boundary of a vacuum zone as attested by Palmer, see column 4, lines 1-3 and the figure."

This section of Palmer discusses that:

"A vacuum bag 28 is then placed over the entire lay-up, and the edges of the vacuum bag are sealed as at 30 to the surface 10 of the tool. A vacuum hose 32 is connected to the bag 28 to draw a vacuum within the interior of the lay-up. The entire tool and assembly is placed within an autoclave (not shown)." (Emphasis added.)

Applicants respectfully submit that Palmer fails to disclose the step of "placing a double-stick tape on the surface at a boundary of said vacuum zone," as required by claim 1. The cited section of Palmer is silent with respect to the seal at 30, and does not disclose that the material 30 is "double-stick tape," as recited in claim 1. To the best of Applicants' belief, the material 30 is a mold release material such as silicone or Teflon emulsion (Freekote 33) on the mold surface 12. See col. 3, lines 6-8. Applicants submit that reference numeral 33 in the text at col. 3, lines 6-8 should actually be reference numeral 30. For example, the drawing does not show a reference numeral 33, and the only reference numeral in the "30" number series is

reference numeral 30. As such, the mold release material 30 is not “double-stick tape” as recited in claim 1. For at least the foregoing reasons, Applicants respectfully submit that Palmer fails to disclose that “placing a double-stick tape on the surface at a boundary of said vacuum zone,” as required by claim 1.

Consequently, the cited reference fails to teach or suggest at least these recitations of claim 1. Accordingly, the rejection of claim 1 should be withdrawn. Claims 3-9 also depend from claim 1, and also because those claims describe additional novel elements and features that are not described in the prior art. Therefore, Applicant submits that these claims are separately patentable, and that the rejections of those claims should also be withdrawn.

**Claims 30 and 32**

Claim 30 relates to a tool for manufacturing large aircraft parts. Claim 7 recites:

“a male mandrel tool having a lay-up surface;  
at least one vacuum zone defined on said lay-up surface by a low profile vacuum seal at a boundary of said vacuum zone;  
a double stick tape included in said low profile vacuum seal at said boundary of said at least one vacuum zone;  
a membrane covering said at least one vacuum zone wherein said low profile vacuum seal forms a vacuum seal between said membrane and said lay-up, surface; and  
a laminate release surface covering said low profile vacuum seal.”  
(Emphasis added.)

For reasons similar to those discussed above with respect to claim 1, Applicants submit that Palmer fails to disclose at least the above-underlined recitations of claim 30. Accordingly, the rejection of claim 30 should be withdrawn. Claim 32 also depends from claim 30, and also because those claims describe additional novel elements and features that are not described in the prior art. Therefore, Applicant submits that these claims are separately patentable, and that the rejections of those claims should also be withdrawn.

In conclusion, for the reasons given above, all claims now presently in the application are believed allowable and such allowance is respectfully requested. Should the Examiner have any questions or wish to further discuss this application, Applicants request that the Examiner contact the undersigned attorney at (480) 385-5060.

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

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